succeeded in dragging the child through the canal. The child lived, but the pelvic organs of the mother were severely damaged. A vagino perineal fistula still persists. During the present pregnancy her attendant had attempted to induce labor at about the thirtieth week. Two weeks later, April 24, 1907, as her physician had left the city for his vacation, the patient applied to me for treatment. The bag of waters had just ruptured. This fact caused me to proceed with the induction of labor, although had I seen the patient earlier I should have recommended Cesarian section at term. Labor was induced by means of Voorhees bags, and a still-born male infant was delivered by a very difficult breech extraction. The child weighed three and a half pounds, the biparietal diameter was 7.5 cm., and along the left parietal and frontal bones was a very deep promontory groove. While under an anaesthetic it was found that the maternal pelvis was contracted latterly to a marked degree and that the promontory, which was high up, projected sharply forward, contracting the true conjugate to approximately 7.5 cm. The external measurements were as follows: Inter spinous, 19.5 cm.; inter cristus, 25.5 cm.; left oblique, 21.5 cm.; right oblique, 24.5 cm.; external conjugate 20½ cm.; between tuberosities, 7.5 cm. Diagnosis: This pelvis was of a masculine, funnel-shaped type. The mother recovered, but still suffers with an incompletely involuted uterus.

It is interesting to note that in this series of nearly seven hundred confinements, aside from the emergency operation of Cesarian section to combat a medical complication, no indication for operation was noted, except pelvic contraction. From careful measurements of the pelvis one patient was found with the absolute indication for Cesarian section, and four patients with the relative indication. Of the three patients coming to Cesarian section the mothers and babies survived. The only patient who attempted the effect of labor pains succeeded in delivering herself, while the only fetal death occurred when premature labor was induced.

Discussion.

Dr. Sherman: The subject is an interesting one, not only for those who practice obstetrics, but for all who have to do with the growing pelvis, and in my life I have had to deal with the pelvis of the growing individual. In two of the cases which Dr. Spalding reported he spoke of the tuberculous hips and the resulting deformity of the pelvis. I have excised a great many hips and have been dealing with the subject of tuberculosis for many years. I have not thought of the future of the patient so far as pelvis shape was concerned, but have gone wide of disease and so have interfered with the lines of ossification where the ischium, ilium and pubis meet. This very probably may have interfered with the breadth of the os innominatum. It is an interesting question and I would like to ask, do the children who have hip joint tuberculosis and go on without operation have better pelves than little girls who come to operation and have to have excision of the head of the femur and acetabulum? That question should be thought of by the orthopedist, or whoever has to decide for or against excision. There is another condition which may or may not deform the pelvis. Sociosis is a disease which produces a deformity of the spinal column with collateral deformities of the ribs. I have seen cases where scoliosis had produced not only the deformity of the spinal column, but some distortion of the pelvis. There is the question, then, whether an individual with this distortion of the pelvis could go on and become a mother. Again, I have had to examine young women who had had scoliosis and who afterward wished to marry and the question has come up whether they could marry with the expectation of normal or safe deliveries if they became pregnant. I never have made a pelvic examination of such a person, but I have often thought that I would like to find if a moderate scoliosis was likely to produce a deformity of the pelvis so that the individual could not safely be delivered of a child. I have known of a good many young women whom I have treated as young girls for scoliosis who have married and had children in the normal way.

Dr. Spalding, closing discussion: With regard to what Dr. Sherman has said of hip joint excision, I recall a patient who had her hip excised at the age of two. The x-ray plate, taken when the patient was eighteen, showed the failure of the development of the left side of the pelvis. The deformity was due, I believe, to the operation, and the effect it had on the development of the primary bone centers of the os innominatum, together with the later effect caused by the weight of the body. With regard to the point about scoliosis, I have never met with a patient having a contracted pelvis due primarily to a marked scoliosis. Undoubtedly patients with moderate degrees of scoliosis must go through labor without trouble or we would have noticed this condition more often. I do not think it a point well taken to warn patients against marriage or to frighten them unnecessarily simply because they are treated for scoliosis in childhood, but I think they should be warned that when they do become pregnant they should call their physician's attention to the fact of the condition of the spine. There is too much latitude in warning patients against marriage for all sorts of conditions. I think medical science is sufficiently developed to meet these conditions and particularly well adapted to cope with the deformities of the pelvis.

FILLING OF BONE CAVITIES.*

By JAMES T. WATKINS, M. D., San Francisco.

It has long been recognized that bone cavities become sooner or later infected, and that they form a menace, not only to primary union, but also to the subsequent healing of the overlying structures. Attempts have been made to fill them with non-absorbable substances, such as amalgam and cement; and with a number of absorbable substances. Among the latter the autoplastic group—blood clot, skin and periosteum and muscle flaps—have been advocated respectively by Schede, Neuber and Schulten. The heteroplastic group, including the fresh young animal bone of McEwen and Poucet, the decalcified bone chips of Senn, and the plaster of Paris compound of Rosenstirn, have each found its warmest advocate in its inventor. No one method has proved universally satisfactory.

The object of the present paper is to direct attention to a new member of the heteroplastic group,

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the iodoform bone plug of von Mosetig-Moorhoof. Dr. James E. Moore of Minneapolis was the first advocate of the iodoform bone plug in this country. I believe that my own case was the first in which it was tried in this section.

The mass was said to have the following characteristic:

(1) It remained solid at body temperatures.

(2) It dissolved at a temperature of 120° F., 50° C., without losing its character.

(3) It was locally non-irritating when introduced into the body.

(4) It was absorbed so slowly as to be non-toxic.

(5) As it was absorbed, its place was taken by organized tissue.

(6) This new tissue either was or very soon became infiltrated with the salts of lime.

In a recent communication von Mosetig-Moorhoof says, "Gradually I arrived at the conclusion that the organism would tolerate only a complete hermetic closure of an aseptic cavity with an antiseptic filling." He prepared such a filling in the following way: Under the strictest asepsis equal parts of spermaceti and sesamoil are melted in an evaporating dish, filtered into a Florence flask and sterilized in a water bath. Next 40 grams of powdered iodoform are put into a sterile flask and 60 grams of the hot mixture added under constant agitation. The flask should not be more than ¾ full, and shaken constantly till the mass solidifies It is then closed with a sterile rubber stopper. The melting point of the plug is 45-48° Celsius. To use the plug, heat the flask again on the hot water bath, never allowing it to get above 55° C., and after shaking well, pour directly from the flask into the wound.

The preparation of the bone cavity comes next. A flap of soft parts and periosteum is turned back, and then all diseased tissue down *into* sound bone is carefully removed. In order that the mass may run into all the canaliculi and bone crevices, the latter must be absolutely dry. If the liquid mass is run in along the sides of the cavity first, its greater specific gravity will cause the little drops of blood at the bottom of bone crevices to be floated upward upon it; so that when the mass has hardened they can be wiped off its surface with a sponge. While filling the cavity such posturing of the part is required as shall enable advantage to be taken of the laws of gravity.

J. S., aged 14, was referred to me from Ferndale, Humboldt County, by Dr. E. Hammond on January 13th, 1903. He had several discharging sinuses in the lower end of his right tibia, following an acute osteomyelitis dating from March in the preceding year.

February 9th, the tibia was opened through a 5-inch incision on its antero-internal aspect, and a sequestrum 2½ inches long removed. A great deal of porous bone was curetted out as far down as the epiphyseal line. Sinuses leading to the surface were curetted and enlarged. The whole wound was drenched with pure carbolic acid for a minute and a half, washed with alcohol and packed with alcohol gauze.

April 6th, the wound in the tibia was thought to have decreased to about one-half its original size; sinuses had closed; granulations looked healthy. The boy was sent home with instructions to occasionally touch the wound with carbolic, to pack with alcohol gauze, and to report in 6 months.

As a matter of fact, it was two years before I saw him again.

June 5th, 1905, he entered St. Luke's Hospital. The boy had grown several inches since I last saw him. A tremendous depressed scar now appeared at the site of the old operation, and in its center a sinus, which discharged a very little watery pus.

June 6th, the scar was laid open by free incision and the entire old wound cavity, which was full of fibrous tissue, curetted out. It was thought subsequently that the remnant of a sequestrum at the bottom of the sinus might have been located by means of the X-ray. The oozing was stopped by hot water compresses and adrenalin and dried with alcohol, and, I think, ether. The cavity was next filled with Morhoff's mass, which had been heating on the hot water bath. The soft parts were then brought together over the mass with sutures of silkworm gut. To release the tension on the sutures, an incision was made on each side of the primary wound, parallel to it and an inch away from it. These lateral incisions were packed. The wound did not heal by first intention, so on. July 1st, it was again curetted and again filled with the mass. About this time Dr. Moore visited San Francisco. He advised me not to disturb the mass, even though the wound should not heal per primum. Again I failed to get union in the old scar tissue, but this time the mass was not interfered with. The wound was simply dusted with a dessicating powder, and covered with sterile gauze.

September 28th, the patient went home.

In May last, Dr. Delamere wrote me that the soft parts had closed over the mass, and the leg appeared to be perfectly well.

In January of this year, through Dr. Delamere's kindness, the accompanying X-rays were taken, and at the same time the boy's mother sent me the picture here presented.

In the letter which accompanied the photo she said: "The new scar is much smaller in every way than the old one, and the depression still present seems to be filling up slowly Jule and I think the second operation was worth while, and were we in the same place again, we would have it done just the same."

This case is not reported as an ideal result of its kind, but to show how much better is even a partial result by this method than what one may expect in all but the very exceptional cases submitted to the older procedures.

The late Professor von Mosetig-Moorhoof performed this operation successfully more than one thousand times For this reason it would seem fair to ascribe failures with the method to technical defects rather than to the procedure itself.

PRELIMINARY REPORT ON A NEW PLASTER COMPOUND FOR PERMANENT SURGICAL DRESSINGS.

By RAYMOND RUSS, M. D., San Francisco.

It is with some hesitation that I venture to make a report on this subject. It has occupied my attention for the past six months, and, while I can appreciate the value of this new plaster compound and can see many ways in which it is an improvement on our old method, at the same time I have not com-